

# Guide to your Yamaha Electone **EX-42**

## CONTENTS

Introduction .....	1
Here is Your Yamaha Electone EX-42 .....	2
Manuals .....	4
Harmonics .....	6
Tone Levers .....	7
Effect Levers .....	8
Couplers .....	10
Vibrato .....	11
Effect Controls and Selectors .....	13
Percussion .....	16
Voice Presets .....	17
Solo Manual (Third Manual) .....	19
Portamento .....	20
Auto Rhythm .....	21
Other Controls .....	22
Set-Up and Connections .....	23
Maintenance and Care .....	26
Do not be alarmed if .....	27
Specifications .....	28



## Introduction

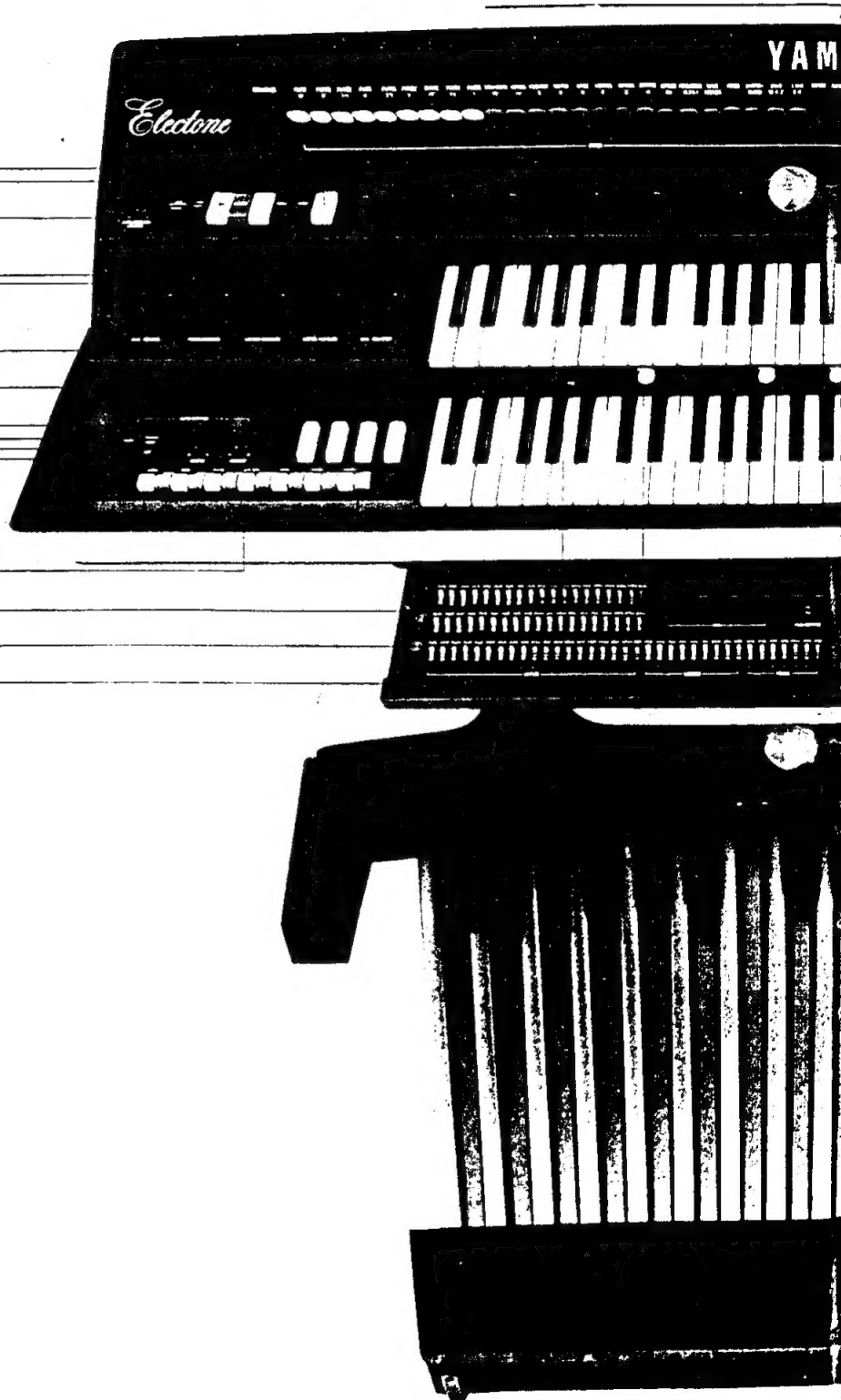
Congratulations on your decision to purchase the world's most versatile musical instrument, the incredible Yamaha Electone EX-42.

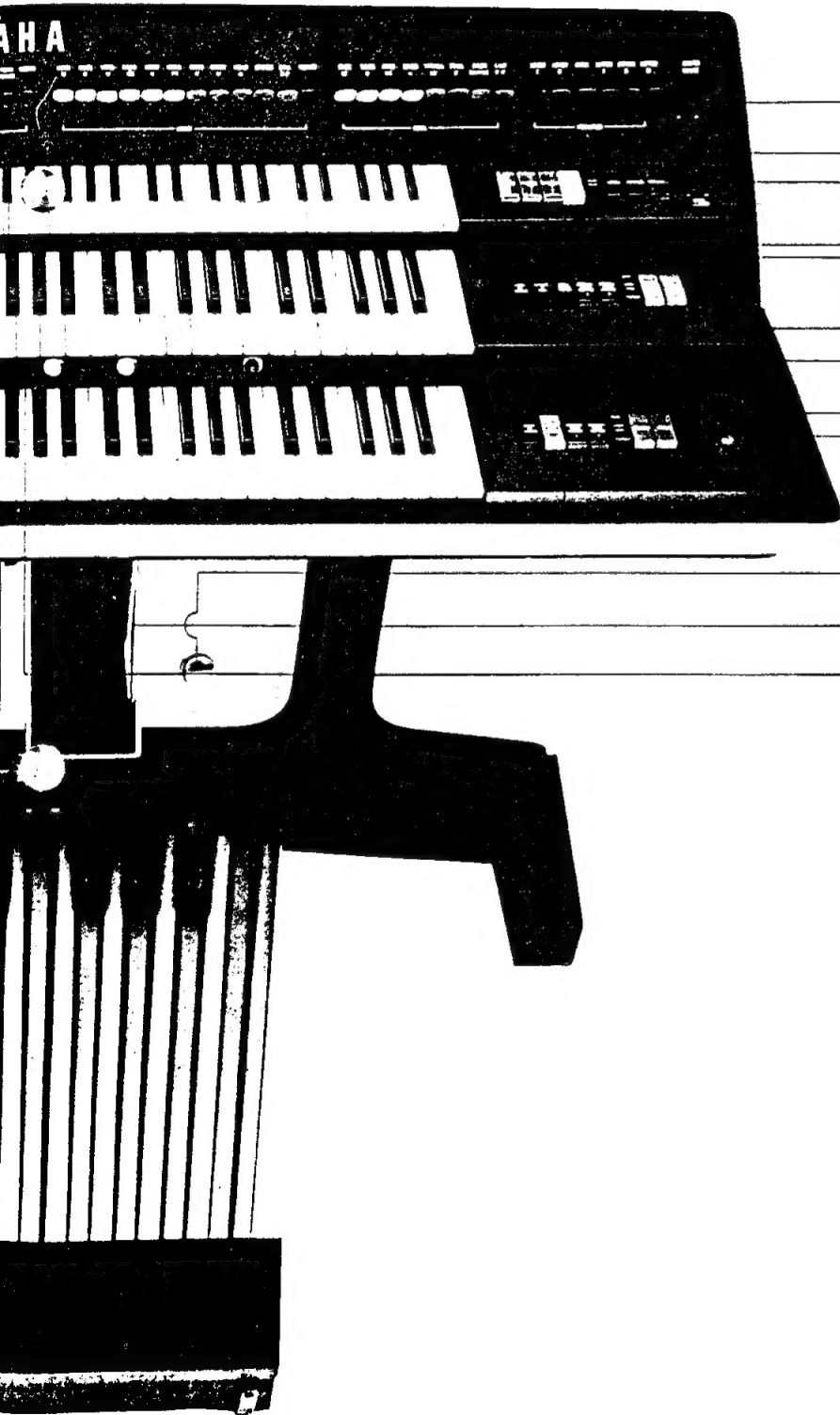
Whether you are now a renowned keyboard artist or just beginning a life of music, you have before you months and years of creative discovery as you accustom yourself to the EX-42's astounding range and versatility. Here are more voices than most organists have ever commanded — all infinitely richer thanks to the brilliant array of built-in Yamaha exclusives. Here you have Auto-Rhythm, Sound-in-Motion Tremolo, factory-balanced preset Piano and Harpsichord, Touch Vibrato, Touch Response, professional Solo and Portamento manuals, four separate Volume and Pitch controls — the list could go on and on.

Get to know them all one by one, then together. To make the most of the EX-42's generous potential please familiarize yourself with all the explanations in this manual.

# Here is your Yamaha Electone EX-42

PORTAMENTO —  
PORT. TONE TABLETS —  
PORT. VOLUME —  
SOLO/PORT. EFFECT SELECTORS —  
EFFECT CONTROLS —  
PERCUSSION BUTTONS —  
AUTO RHYTHM VOLUME —  
TEMPO INDICATOR LAMP —  
TEMPO CONTROL —  
RHYTHM START —  
SYNCHRO-START —  
AUTO RHYTHM SELECTORS —  
PEDAL VOLUME —  
PEDAL SOLO —  
PRESET BOARD —





MASTER VOLUME

SOLO TONE TABLETS

SOLO VOLUME

SOLO MANUAL

EFFECT SELECTORS

TREMOLO SELECTORS

PILOT LAMP

POWER SWITCH

EFFECT SELECTORS

TOE PISTONS

KNEE LEVER

PRESET PISTONS

# Manuals

The Yamaha Electone EX-42 has five manuals:

Upper	61 keys (C-c4) 5 octaves
Lower	61 keys (C-c4) 5 octaves
Pedalboard	25 keys (C1-c) 2 octaves
Solo	37 keys (c-c3) 3 octaves
Portamento	(c-c3) 3 octaves

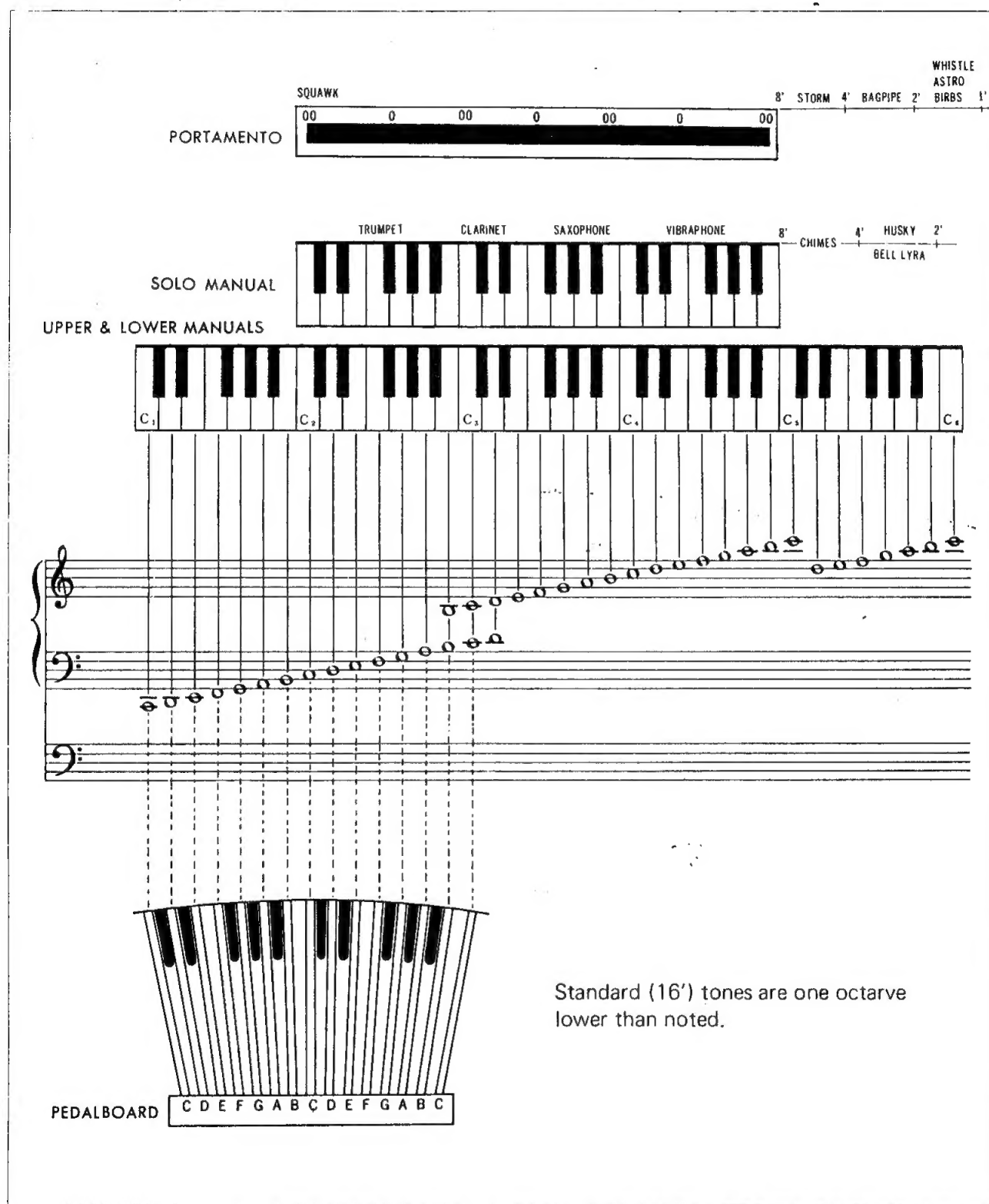
Each of these five manuals has its own tone generator, permitting individual volume, pitch, vibrato, Wave Motion and coupler controls. This is one of the reasons for the EX-42's astounding creative versatility.

Manual and pedal keys are made of durable material. They will provide years of beautiful appearance and playing ease. The pedalboard is of a radial arc design, and pedal length is ample to allow heel-and-toe playing.





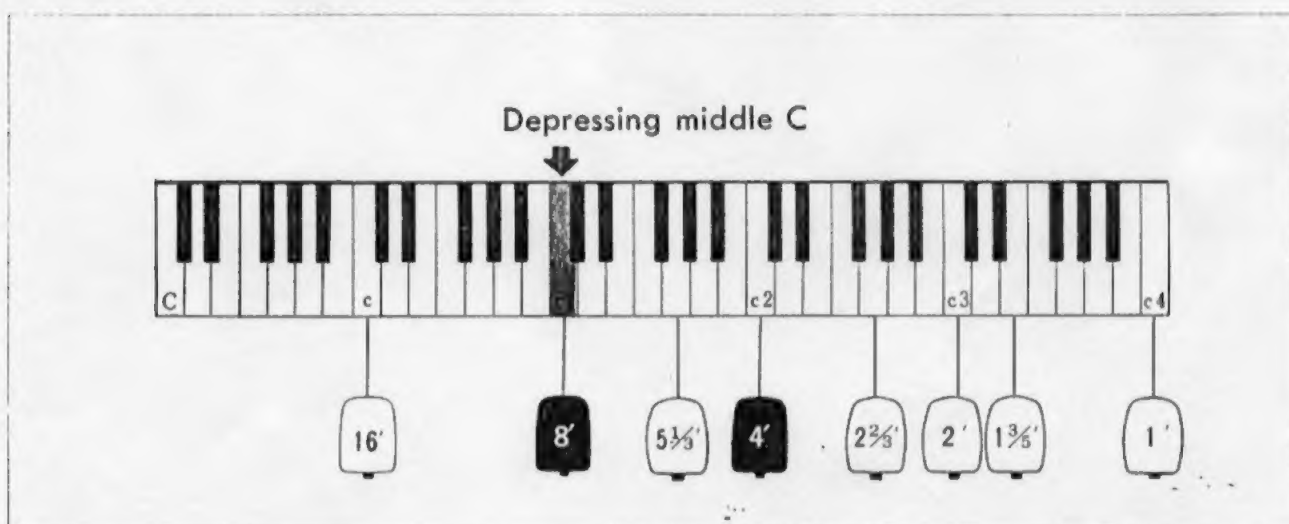
## The Compass of the Electone EX-42



Note: The notes shown here are only those obtained using fundamental (i.e., 8') tone levers. By using the other tone levers the EX-42's full, expressive compass is achieved, as the range is extended at top and bottom.

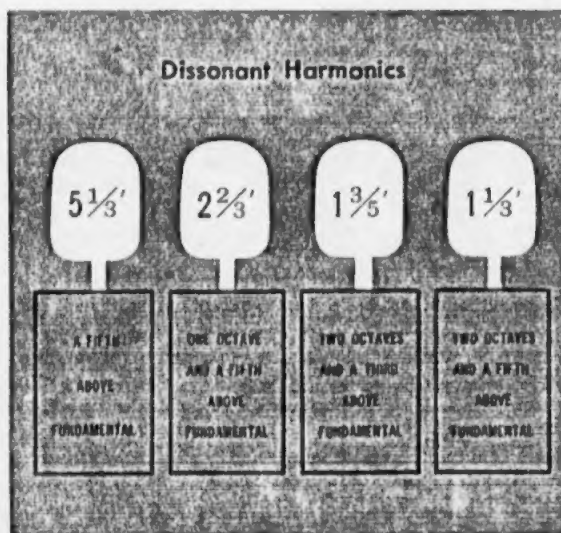
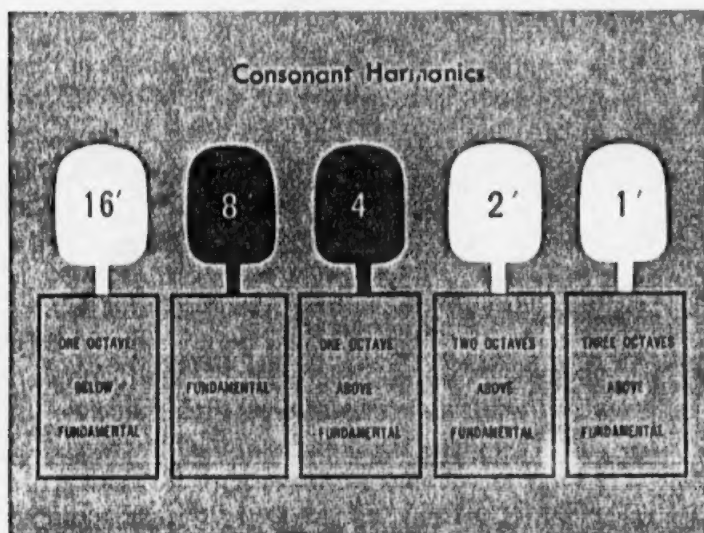
# Harmonics

Tone levers are of several varieties: 16', 8', 2', etc., and each variety controls the note's pitch. The 8' tone levers are 'fundamentals', which means they produce the same pitch as the written note. The others, called 'harmonics', are each pitched at certain intervals above or below the fundamental. Harmonics can be further subdivided into 'consonants', at octave intervals from the fundamental, and 'dissonants', separated by a third or a fifth from the fundamental or a consonant harmonic. In other words, pressing a single key can result in a variety of tones blended in, depending upon the tone lever settings. For example, when middle C (in music, 'c1') is pressed, the various tone levers will result in notes as shown below:



This shows how the use of these harmonic levers actually increases the EX-42's compass above and below that indicated by the keys and pedals alone.

The use of the 16' lever, for example, will extend the upper and lower manual notes down an octave to C1. Similarly, the 1' lever provides notes three octaves higher than those actually played, etc. The major use of the harmonic levers, however, is to increase the richness of the tone — they add spice to the fundamental. As with any artistic effect, overuse will lead to weakness, so always combine voices and harmonics for a tonal blend which best suits the selection.



Note: Portamento and Solo manual tone selectors have on-off functions only; they are tablets, not tone levers. In addition, special Upper manual voices are called forth by on-off selectors which are nevertheless shaped like tone levers. These special voices are explained in another section.



# Tone Levers

On the control panel above the Portamento and Solo manuals is a bank of tone levers, divided into three groups (Upper, Lower and Pedal) according to the manuals they serve.

The Brilliance lever on the extreme left controls an effect which serves all manuals. It is described in another section.

The set of six black levers on the right are shaped like tone levers, but actually control the percussive effects. They are also explained in another section.

## Tone Lever Registration

Tone lever registration is given by numerical indications which show the click-stop position of each lever, as illustrated above. The indications are in the order in which the levers appear on the control panel.



## Bass Guitar

By producing the electric bass guitar sound, this lever gives more vivid and clearer bass sound.

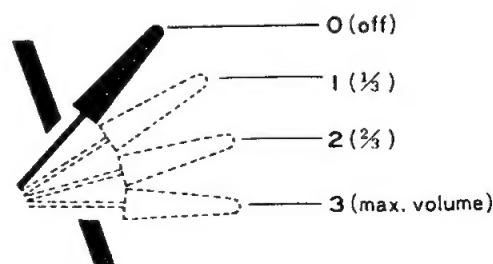
## The Exclusive Yamaha Tone Lever System

Each tone lever can be continuously adjusted from off to full for extremely delicate tonal balance and shading. This system provides an infinite variety of tonal combinations — much more than the mere on-off systems used by others.

In addition, as each tone lever is depressed two click-stop positions are felt. These slight catches indicate  $1/3$  and  $2/3$  of the maximum setting respectively. The click-stop system provides mathematically accurate formulas even a beginner can use with assurance, but it does not affect the subtle adjustments required by the keyboard master.

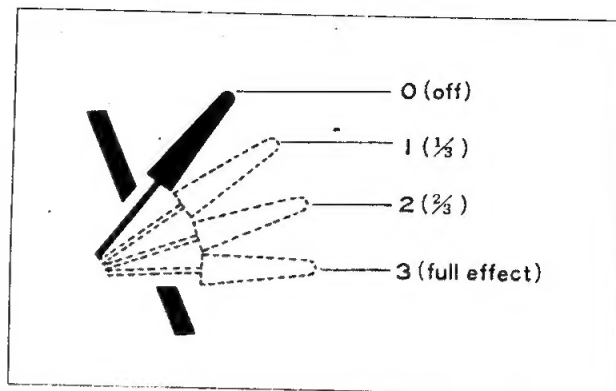
The most important single point in achieving full keyboard control is the early mastery of the tone levers. Make it a practice to experiment with various settings, and try to copy any tone combinations you hear on records, at concerts, etc.

The use of tone levers for volume control is also a means of controlling the balance between Upper and Lower manuals and the Pedalboard.



# Effect Levers

Except when otherwise noted, these levers have the same operation as the tone levers and allow the organist to vary the depth or speed of their effects according to their positions, as illustrated.



## BRILLIANCE

This lever is used to obtain the difference in mood necessary for quiet, somber works or brighter, richer tonal effects. When this lever is off, a softer, more mellow tone is imparted, reminiscent of muted violins. An example of a work suited to this tonal treatment would be Sarasate's *Zigeunerweisen*. The effect can also be used to enhance soft woodwind tones.

Depressing the lever, on the other hand, creates a more brilliant feeling, perfectly suited to certain solo melodies and various harmonics and chords. Works only on Upper and Lower manuals.

## ATTACK

This lever provides an effective rhythmical element, reminiscent of the string bass played pizzicato. This effect is particularly impressive in rhythmic works, where its continuous controls provides an infinity of settings to match any selection. There are three different Attack controls: the Upper and Lower 8', 4' Attack tablet, an Upper manual Attack 1 1/3' lever and a pedal Attack 8' lever.

Attack gives greater definition to the beginning and end of notes. The U & L 8', 4' Attack tablet affects all Upper and Lower manual 8' and 4' voices. Upper manual Attack 1 1/3' is specially useful for fast beats, such as jazz; it adds special 'oomph' for expressive bass solo or heavy beat selections.

## REPEAT AND REPEAT SPEED

Everyone will enjoy the fun of the many thrilling and exciting sounds that are possible with repeat percussion. This effect 'chops up' notes played on the upper manual, producing a double-strummed effect similar in sound to the mandolin. The Repeat lever controls its depth, while Repeat Speed controls its speed zero to fourteen times per second. Combine the Repeat effect with Sustain for many lifelike instrumental sounds such as marimba, banjo, etc.

## STRINGS

Using the Upper manual tone generator, this special effect blends in the Upper manual string voices. If the Upper and Lower manual pitches are different, the combination takes on added impact, increasing in dramatic depth with the difference in pitch and tone.

This lever will work regardless of Upper manual tone lever settings, and if it is used in conjunction with Upper manual Vibrato, this Vibrato will cover the whole String combination.

## **PIANO, HARPSICHORD**

Once you get to know your EX-42 well you will realize that these two preset voices are examples of the world's most advanced organ technology. Depressing either on/off lever automatically cancels all other Upper manual voice settings. To preserve the reality of these Preset voices, they also cancel U to U 16' 4' 2'. Upper Touch Response II, Upper 8' 4' Sustain and the Upper Sustain control. In their place are perfect balances of tones to realistically duplicate either of these two instruments.

Tone is only part of the story. You also get an ideal combination of key touch response, tone color and sustain to play as if you were sitting at a real piano or harpsichord.

Note: U.S. model's feature a Piano & Harpsichord Sustain tablet in place of the Upper Singing Vibrato at the right of the Upper Manual. This tablet works together with the knee lever for sensitive control.

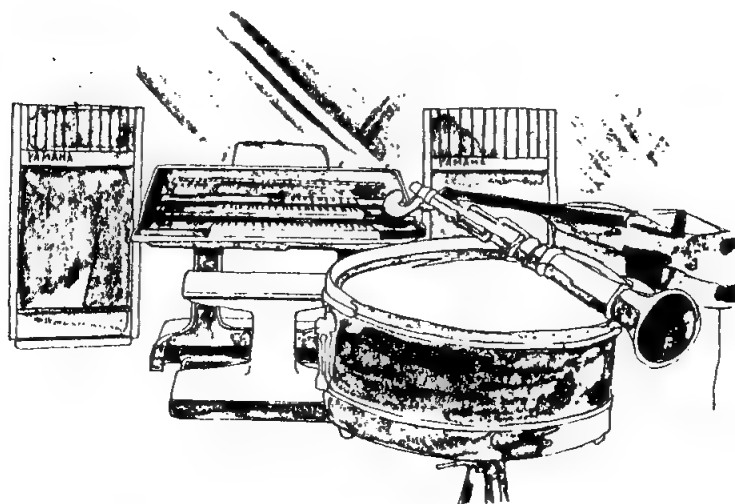
## **PERCUSSIVE 16', 2 $\frac{2}{3}$ ', 1'**

Changing the beginning of some or all notes can do wonders for lively selections, really shines, thanks to a variety of percussive effects that provide subtle but important shading at the moment each note is heard. The EX-42's special popping 16', 2  $\frac{2}{3}$ ' and 1' percussive drive can be smoothly blended into all upper tones with this continuously-variable lever. When using percussive effects, use a staccato fingering. Each note should be played cleanly; slurred notes will diminish the percussive effects.

## **WAVE MOTION**

When used with the Upper manual tones alone, this on/off effect provides phase differences reminiscent of grand pipe organs.

For a specially wide range of expressive possibilities, try the following. Use the Solo manual Pitch control (on the preset board) to vary the Upper and Solo manual pitches slightly when both manuals are being played. This technique is even more spectacular when combined with Upper manual Vibrato or Touch Vibrato and Solo manual Touch Mute.



# Couplers

The coupler levers have a simple on-off function, and they perform the important task of increasing the manual's voices.

**U TO U 16', 4', 2'** When this coupler is used with 8' and 4' upper manual voices it adds three consonant harmonics of the same voice or voices in use.

Tone Lever	Harmonics Coupled
8'	16' 4' 2'
4'	8' 2' 1'

When, for example, the coupler is used with the Clarinet 8' voice, it provides Clarinet 16', Clarinet 4' and Clarinet 2' harmonics, which are not available via the tone levers. Similarly, when more than one tone lever is used, the harmonics are applied in each of the voices. It can be seen by this that the U to U coupler assures extended convenience in achieving complex tonal combinations with a single tone lever setting.

**L TO U 8', 4'** With this lever on and either 8' or 4' tone lever, or a combination of both, set on the Lower manual, these voices are fed through the upper manual keys for added versatility and deepened cathedral effects.

Here you can make full use of the independent tone generator system: vary the Upper and Lower manual pitches slightly and hear the singing beauty reminiscent of traditional cathedral organ music, especially when you blend in Lower manual Vibrato.

**U TO L 8', 4'** Depressing this lever automatically combines all selected 8' and 4' Lower manual voices with 8' and 4' pedal tones. This lends an even richer body to the heavy pedal beat. In addition, if the Lower manual Vibrato lever is set, this effect will also carry over with the Lower manual 8' and 4' voices.

**L TO P 8', 4'** This lever has exactly the same effect as L to U 8' 4' (see above), except in reverse.

**Note:** The EX-42 coupler levers also serve to enlarge the scope of both Upper and Lower Sustain. Ordinarily restricted to only 8' and 4' voices, Sustain also extends to other harmonics called forth by the coupler system. In other words, when the Upper Sustain is on and so is the U to U 16' 4' 2' lever, the Sustain effect will extend to 16', 8', 4', 2' and 1' tones.

Tone Levers Used	Sustain Applies
No coupler	8', 4'
8' tone levers & coupler	16', 8', 4', 2'
4' tone levers & coupler	8', 4', 2', 1'
8', 4' tone levers & coupler	16', 8', 4', 2', 1'

The result is a greatly expanded sustain to complement the full, extended harmonics.

# Vibrato

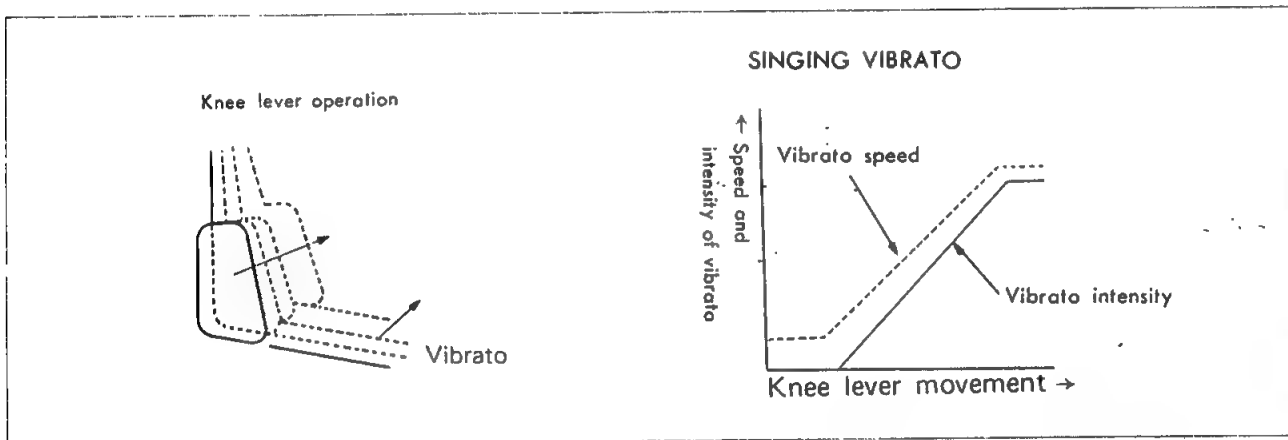
## VIBRATO

Vibrato increases the richness of emotional passages, adds a brisk or lively air to selections of relative simplicity. The continuously variable lever controls its depth, not speed (which is constant). There are separate controls for Upper and Lower manuals.

## SINGING VIBRATO

In addition to the Vibrato, the EX-42 features another vibrato control which, like the touch vibrato, enables the organist to project the complete depth of the music's emotional feeling directly to his audience. This is the Singing Vibrato. This revolutionary effect comes from innovations which enable you to vary vibrato intensity.

When the Upper Singing Vibrato tablet is on, the Upper manual Vibrato lever is automatically canceled. In its place is a similar vibrato effect which increases in both speed and intensity by the operation of the knee lever. This allows you to blend in vibrato to any passage, smoothly or quickly, matching any musical mood.



## TOUCH VIBRATO

This world-famous Yamaha exclusive gives to the organist the same expressive fingertip vibrato enjoyed by the violinist. The lever that controls it is a continuously variable tone-lever type, with the range of vibrato intensity increasing as the lever is depressed.

With this effect vibrato can be applied to any upper manual note by the lateral vibration of the hand, and its speed will correspond exactly to the hand's vibration.



Note: Regular vibrato is cancelled only when the Touch Vibrato lever is fully depressed. For special vibrato effects, use the regular Vibrato and Touch Vibrato (partially on) together.

Very heavy use of Touch Vibrato may cause pitch fluctuations. Always try for light, natural fingering. Touch Vibrato is best when used with simpler Lower manual and Pedal accompaniments.





\* Although the overall end results of both Singing and Touch vibratos are similar, the methods for using them are quite different. Singing Vibrato depends upon knee action, while Touch Vibrato results from finger movement. The latter is of course a more delicate control: it results in more subtle emotional shading during a performance, and requires more sophisticated techniques. Touch Vibrato also represents a greater technological organ advancement, which is why it is unique to Yamaha.

Singing Vibrato, on the other hand, is more suited for complex Upper manual passages, especially those with chords, where Touch Vibrato requires a finger strength even many advanced players lack. In other fast-moving Upper manual passages, such as jazz, etc., the knee-lever control of Singing Vibrato is also more appropriate at times.

\* Singing Vibrato is very effective when combined with the String voices and Sustain; closing the knee lever for staccato notes and opening it for sustained notes gives an excellent approximation of a real violin. This technique can also be used with Oboe, Clarinet and Flute voices — whenever a quick change from staccato to sustained, vibrant tones is appropriate.

\* A combination of Singing Vibrato and Sustain can result in a rendition very similar to the Hawaiian guitar. After depressing each note, open the knee lever for about one second, then close it.

1) Combined with the String voice and Sustain on the upper manual, for example, it imparts a true violin tone, closing the knee lever for staccato notes and opening the lever for sustained notes. This also can be applied to Oboe, Cello, Clarinet and Flute Solo sounds. It also enables you, with the movement of the knee, to change from a staccato, non-vibrato organ into a beautiful, sustained, melodious one.

2) To create the percussive mood of the Hawaiian guitar, set both the Singing Vibrato and Sustain and, while playing, open the knee lever about one second or slightly less after depressing the appropriate keys.



# Effect Controls and Selectors

Upper Right Panel General Spec.



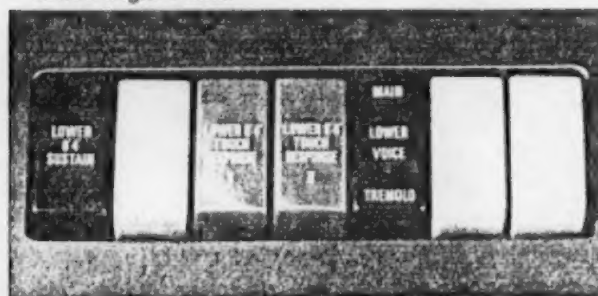
U.S.A. Spec.



Upper Left Panel.



Lower Right Panel.



## U & L BALANCE

Governs the relative strength of the upper and lower manuals. It is normally left in the center position. But when you wish to strengthen one manual, for example when the Upper manual plays a melody and the Lower its accompaniment, the knob can be turned (in this case to the right) to emphasize the Upper manual. Similarly, the control is turned to the left when strongly played accompaniment is required or when the melody is played on the Lower manual and requires greater emphasis.

## UPPER, LOWER, PEDAL SUSTAIN

These controls provide continuous adjustment of the sustain effect on the three manuals concerned. For the pedalboard, this is the only sustain control, and it affects all pedal tones, while for the upper and lower manuals these controls are only length adjustments. Actual Upper and Lower sustain effects are switched on and off as explained below.

## UPPER, LOWER 8', 4' SUSTAIN

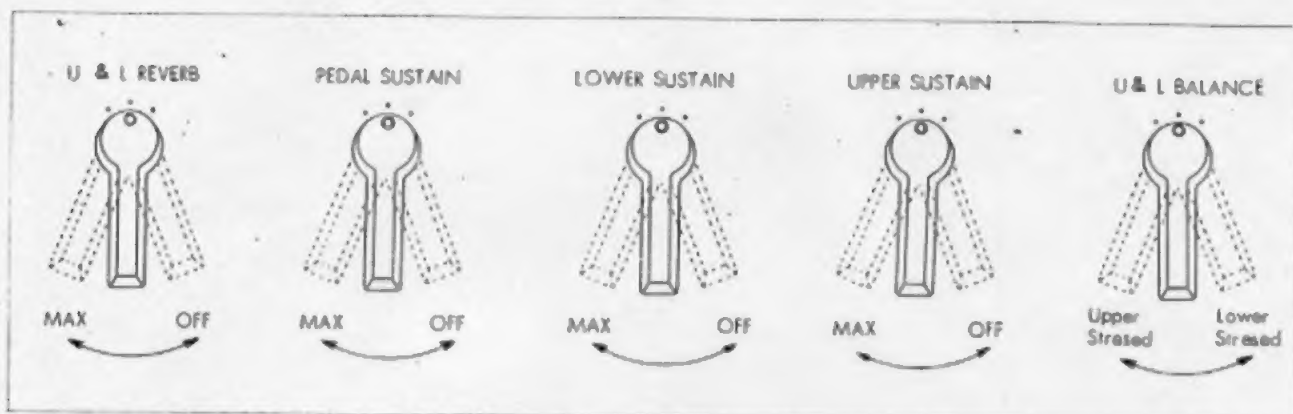
When either one or both of these tablets are switched on, the sustain effect is then called forth by the knee lever.

As the name of the tablet implies, only 8' and 4' tones are affected, but on the upper manual this can be expanded to 16' and 2' tones when the U to U lever is on.

The length of such sustain is set by the controls mentioned in the section immediately above.

## U & L REVERB

Reverberation is the quality that is imparted to a musical sound as a result of the acoustical properties of a large auditorium or hall. The use of this effect allows you to overcome the sound damping caused by furniture, drapes, carpets, etc. Continuous control lets you regulate the strength of the reverberatory effect, softer or louder as the music requires.



## KNEE LEVER

This special control lever under the key bed allows you to switch in a variety of effects for instantaneous shifts in mood and tonal combinations — even in the middle of a phrase. It works with

- a) the Upper Preset to Panel switch ON.
- b) knee lever for quick vibration and stronger under tone.
- c) Upper and Lower Sustain switch ON.

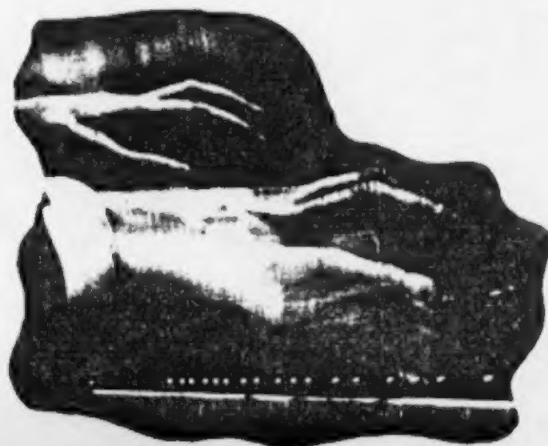
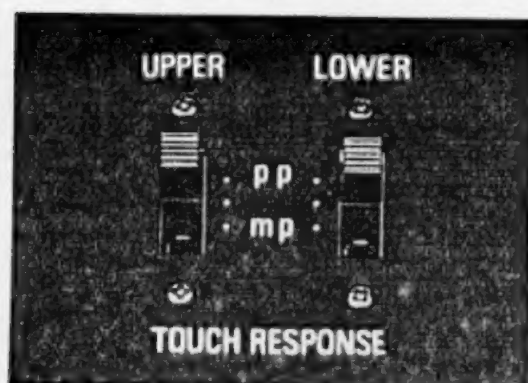
## TOUCH RESPONSE

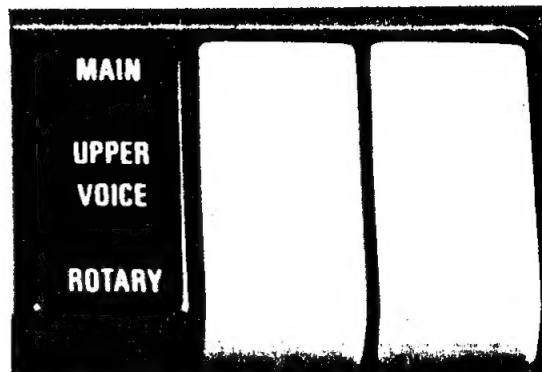
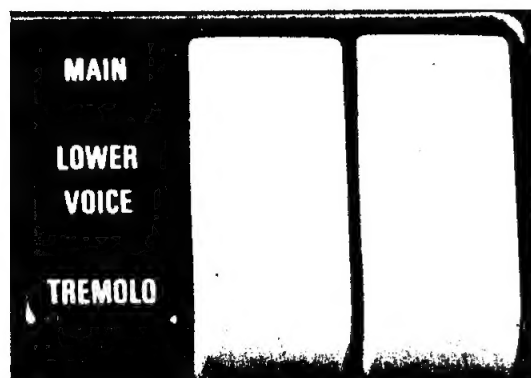
This special Yamaha development lets you transfer the power in your fingers to the music according the way you play the keys. Setting the Touch Response levers then lets your fingers control each 8' and 4' note's tone quality, and keeps the note lingering on after the key is released. For each manual, the **length** of this lingering sound is selected by the tablets: Touch Response I provides a longer tone than Touch Response II. If both tablets for either manual are depressed, Touch Response II will take precedence.

The **volume** of this lingering tone depends upon how you play the note, but the range can be controlled by the Touch Response switches located on the Preset Board. The upper (pp) and lower (mp) settings correspond to the standard piano pedals, and there is also a center position.

Do not forget the extra expressive possibilities provided by the separate-manual control system. Using the Touch Response for only one manual, or different settings on Upper and Lower, can add a distinctive accent to your style.

Note : Touch Response is part of the Piano and Harpsichord tonal blends, so when they are used the Touch Response levers here no effect.  
This effect cancels Manual Sustain.





### Sound-in-Motion Tremolo

A vibrant, moving sound source more realistic than a mere baffle system could ever hope to be, the unique Yamaha tremolo works this way: inside each tone cabinet is a bank of speakers that actually rotate to fill the grandest hall with a thrilling Tremolo (seven revolutions per second) or Chorus (one per second). The last three tablets at the right of both Upper and Lower manuals turn the tremolo on and off. Use the red tablets to select the speed and begin tremolo speaker revolution, the black to switch the signal from main to tremolo speakers and back. Note that these separate Upper and Lower tremolo selectors also result in an extra Ensemble (main/tremolo speaker combination) effect. Simply switch to the tremolo speakers for one manual, leaving the other on main.

Note: Tremolo speaker revolution speed adjustments can be made via the control on each tone cabinet.

